

REMARKS

1. Amendments to the Claims

Claims 1, 3-13, 15 and 16 are pending. Claim 1 is amended to incorporate claim 2. Claims 3, 4, and 12 are amended to account for the cancellation of claim 2. Accordingly, claim 2 is herein cancelled. No new matter has been added.

2. Rejections Under 35 U.S.C. § 101

The Examiner has rejected claims 1-13, 15 and 16 under 35 U.S.C. § 101 as directed to non-statutory subject matter. The Examiner cites *In re Bilski*, 88 U.S.P.Q.2d 1385, 545 F.3d 943 (Fed. Cir. 2008) (*en banc*), as support for the conclusion that this is non-statutory subject matter.

As a preliminary issue, Applicants note that *In re Bilski* was based upon a business method. The Court explicitly declined to apply the ruling of *In re Bilski* to “any other such category of subject matter.” *Bilski*, 88 U.S.P.Q.2d at 1395, n. 23. “A claimed process is surely patent-eligible under §101 if: (1) it is tied to a particular machine *or* apparatus, or (2) it transforms a particular article into a different state or thing.” *Id.* at 1395. Applicants submit that the presently claimed invention meets both prongs of the machine-or-transformation test.

a. Particular Machine

The claims are directed to “a method for visualizing correlation data concerning two biological events or the correlation data and feature data regarding each event in a matrix format in a suitably programmed computer.” (Claim 1). Applicants submit that the machine in the present invention must be programmed suitably to carry out the claimed method as supported by the Specification at page 18, lines 1-17 and original claim 15, directed a “computer-readable recording medium in which a program for causing a computer to implement the visualizing method, analysis method or database . . . is stored.” Accordingly, Applicants submit that the claims are suitably tied to a particular machine such that they include patentable subject matter.

b. Transformation

Applicants submit that even under *Bilski*, the claims meet the transformation standard. The visualization and transformation of data was considered in *In re Abele*, 214 U.S.P.Q. 682, 684 F.2d at 909 (C.C.P.A. 1982). In *Abele*, the visualization of data was a sufficient transformation when that data used to generate the visualization was defined by a technological application. *Abele*, 214 U.S.P.Q. at 688. *Bilski* positively referred to *Abele*:

Our predecessor court's mixed result in *Abele* illustrates this point. There, we held unpatentable a broad independent claim reciting a process of graphically displaying variances of data from average values. *Abele*, 684 F.2d at 909. That claim did not specify any particular type or nature of data; nor did it specify how or from where the data was obtained or what the data represented. *Id.*; see also *In re Meyer*, 688 F.2d 789, 792-93 [215 USPQ 193] (CCPA 1982) (process claim involving undefined "complex system" and indeterminate "factors" drawn from unspecified "testing" not patent-eligible). In contrast, we held one of *Abele*'s dependent claims to be drawn to patent-eligible subject matter where it specified that "said data is X-ray attenuation data produced in a two dimensional field by a computed tomography scanner." *Abele*, 684 F.2d at 908-09. This data clearly represented physical and tangible objects, namely the structure of bones, organs, and other body tissues. Thus, the transformation of that raw data into a particular visual depiction of a physical object on a display was sufficient to render that more narrowly-claimed process patent-eligible.

We further note for clarity that the electronic transformation of the data itself into a visual depiction in *Abele* was sufficient; the claim was not required to involve any transformation of the underlying physical object that the data represented.

Bilski, 88 U.S.P.Q.2d at 1394.

Applicants submit that following the logic of *Abele* and *Bilski*, the claims contain patentable subject matter. The claims specifically identify correlation data from biological events and feature data from biological events. Applicants submit that the transformation in the present situation is like the transformation of *Abele*, because it is a tangible visual depiction of a relationship between biological events.

c. Applicants do not seek to preempt natural phenomena.

Natural phenomena are not patentable. "The Court in *Diehr* thus drew a distinction between those claims that "seek to pre-empt the use of" a fundamental principle, on the one hand, and claims that seek only to foreclose others from using a particular "application" of that fundamental principle, on the other. 450 U.S. at 187." In *re Bilski*, 88 U.S.P.Q.2d 1385, 1390, 545 F.3d 943 (Fed. Cir.

2008) (*en banc*). Applicants submit that the claims do not pre-empt a fundamental principle, but instead apply a principle to a specifically programmed machine to obtain a visual depiction of a relationship between biological events. The application does not foreclose all relationships between any type of events, nor does it foreclose all possible visual depictions of the relationship between biological events. Accordingly, Applicants submit that the claims are drawn to patentable subject matter. Applicants request that the rejection be withdrawn.

3. Rejections Under 35 U.S.C. § 103

Claims 1-10, 12, 13, 15 and 16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ge in view of Cras et al. (hereinafter “Cras”). Applicants respectfully traverse.

As a preliminary matter, Applicants note that claim 1 has been amended to incorporate claim 2.

Applicants maintain that claims 1, 3-10, 12, 13, 15, and 16 are not obvious in view of Ge and Cras. In particular, the data display formats of claim 1 are not disclosed in Figure 1 and Table 1 of Ge. Specifically, Applicants point out that the “events” discussed in the present Specification are biological events, not the correlation data which connects them. (See Specification, page 8, lines 12-24). The transcriptome-interactome analysis of Ge merely puts forth a single event, where two or three expressed genes interact. The cluster columns merely indicate the correlation data, not necessarily a separate biological “event” as discussed in the Specification.

In Table 1, there is no evidence that this table is considered to be one of “a plurality of display formats” which displays correlation data “in a matrix format”. Instead, this table is not incorporated into the alleged display presented in Figure 1 and is instead presented as a separate table.

Furthermore, Cras does not remedy these deficiencies, and is not cited in the Examiner’s rejection of claim 2 on page 7 of the Office Action.

Accordingly, Applicants submit that Figure 1 and Table 1 of Ge do not render obvious each of the elements of claims 1, 3-10, 12, 13, 15, and 16. Applicants request that the rejection be withdrawn. Applicants respectfully request that the rejection be withdrawn.

Claims 1-13, 15, and 16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ge and Cras and further in view of Artymiuk. As discussed above with the rejection in view of Ge and Cras, Applicants respectfully request that the rejection be withdrawn.

Artymiuk is cited solely for the teaching of a matrix with rows and columns of cells encompassing structural units of molecules wherein the structural unit are atom(s) in a molecule, with information about distances between structural units. (Office Action, page 12).

Accordingly, Artymiuk does not remedy the deficiencies of Ge and Cras, in that the reference does not teach either that the one of a plurality of display formats (a) is (A) a table data display format having correlation data concerning a pair of events as a single display data unit or (C) a data display format having the result of statistically processing a set of correlation data as a single display data unit. Accordingly, Applicants request that the Examiner withdraw the rejection.

In view of the above statements, Applicant believes the pending application is in condition for allowance.

Application No. 10/569,494
Amendment dated February 26, 2010
Reply to Office Action of November 27, 2009

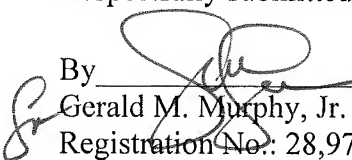
Docket No.: 1254-0304PUS1

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mary M.H. Eliason Reg. No. 58,303 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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